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Arizona Corporation Commission

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October 19, 2000

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Intervenor: David A. Lundgreen

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1. Expert witness:

A. Dale H. Borger
2301 E. Millbrae Dr.
Gilbert, AZ 85296

AZ CORP COMMISSION
DOCUMENT CONTROL

Civil Engineer--30 years experience in power generation construction and maintenance

Testimony Aspects:

2. A. Mismanagement on account of SRP which has led to the supposed critical power problem in the state of Arizona.
 - A.1. Historical information and management of the Palo Verde Plant and Coronado Plant.
 - A.2. If need for power is so critical, why was SRP caught with its pants down?
 - B. The gas issue and the proposed new 18" line.
 - B.1. Gas Pipeline Accidents are on the rise
 - B.2. Federal management of pipelines has gone down while accidents are increasing
 - B.3. Constructing a 12-mile long, 18", gas pipeline from Price Road down to Val Vista has a lot of inherent risks both during construction as well as after, over the long term. Right now we can prevent setting up this accident.
 - B.4. Not prudent to run a new line of this size through the heart of existing Tempe and Gilbert communities
 - C. The water requirements and associated issues of supply.
 - C.1. Canal closure for 6 weeks each year
-
3. A. Decisions made by SRP over the years that show a pattern of mismanagement and incompetence.
 - A.1. Accident at Kyrene, some 3 years ago the result of poor maintenance
 - A.2. Palo Verde Plant sell off of ownership by SRP
 - A.3. Coronado Plant expansion and then halting the expansion
 - B. The Gilbert community and the Arizona Corporation Commission were both told that all the infrastructure necessary was in place at the existing San Tan site to expand the generating facility. Only in submitting the Application for a Certificate of Environmental Compatibility did SRP mention that the needed natural gas supply did not exist. I will talk regarding this issue and associated legitimate concerns and community risks of constructing and then forever having an 18" pipeline going right through the heart of Tempe and Gilbert.
 - C. This is self explanatory based on required water utilization and treatment by the proposed new plant and not having a sufficient water supply that would not in some way directly impact Gilbert's groundwater supply.
 - C.1. SRP wells tap into Gilbert's groundwater
 - C.2. Groundwater Management Code
 - C.3. Non Per Capita Conservation program (AZ Dept of Water Resources)

- C.4. Irrigating with spent water exiting from the plant
 - C.5. Agreements with Gilbert to use unused surface water
 - C.6. Town of Gilbert water usage per day per person
4. Issues of building a plant of this size in a bedroom community like Gilbert
- A. No noise ordinance for construction exists in Gilbert
 - B. Construction will occur essentially night and day for 2 years
 - C. 500 – 1000 people will come in each day to work on the plant. Where will they park their cars?
 - D. Traffic issues
 - E. Issue of having all these construction workers around our community reduces our safety, especially our children's safety

Exhibits:

- #1 Listing of existing Plants
- #2 Proposed Power Plants
- #3 Overhead view of existing San Tan Site
- #4 Bureau of Reclamation – Colorado River Hydro Basin Projects
- #5 Completed generator uprates for power uprating program (1978-2000)

Exhibits to be Supplemented Later when received:

- #6 Discontinued Coronado plant expansion
- #7 Ownership reduction at Palo Verde Plant
- #8 Chemicals and the water
- #9 Generation capacity and in-state usage

| | Gen. X Capacity in MW | |
|-------------------------------|-----------------------|-----------|
| La Verde Nuclear Gen. Station | 3 x 1,300 = | 4,900 MW |
| Navajo Gen " | 3 x 750 = | 2,500 MW |
| Four Corners " | 2 x 745 = | 1,990 |
| | 2 x 170 = | 340 |
| | 3 x 220 = | 660 |
| | | 2,490 |
| Coronado Gen " | 1 x 365 = | 365 |
| | 1 x 395 = | 395 |
| | | 760 |
| Agua Fria " " | | 600 |
| Craig " " | 3 x 420 = | 1,260 |
| Kyrle Power " | | 250 |
| Santon " " | | 300 |
| Joseph City " | | 750 |
| University & Road " | | 400 |
| Springville " | 750 | 14,710 MW |
| | | 750 |
| | | 15,460 |

STATUS OF PROPOSED POWER PLANTS

| <u>No.</u> | <u>Plant name</u> | <u>Developer</u> | <u>Location</u> | <u>Size (MW)</u> | <u>Start Constr.</u> | <u>Plant Operat.</u> | <u>Status</u> |
|------------|-----------------------|-----------------------------|-------------------------|----------------------------------|----------------------|----------------------|---|
| 1. | Griffith Energy Proj. | Duke Energy No./Griffith | 8 mi. S. of Kingman | 520 MW | | | Under construction |
| 2. | Desert Basin | Reliant Energy | Casa Grande | 500 MW | | | Plant approved; awaiting trans. line appr. |
| 3. | South Point | Calpine | 28 m. S. of Bullhead C. | 500 MW | | | ?? under construction ?? |
| 4. | Kyrene | SRP, Dynenergy, | Tempe | 825 ²⁵⁰ MW | | | not filed yet |
| 5. | Santan | SRP | Gilbert | 825 MW | | | not filed yet |
| 6. | 43 rd Ave. | Pinnacle West, Calpine | Phoenix | 500 MW | | | Approved |
| 7. | Red Hawk | Pinnacle West | 1m. S. of Palo Verde | 2,120 MW | Fall 2000 | | Approved |
| 8. | Arlington Valley | Duke Energy | 15 m. SW of Buckeye | 580 MW | 2001 | | LSC hearing cont.: 5/5 |
| 9. | Harquahala | PG&E Energy Services | W. of Wintersberg | 1,040 MW | 12/2000 | | LSC approval: 3/15 |
| 10. | Gila Bend Gen. Stn. | Power Dev. Ent., Ind. Power | 6 m. NW of Gila Bend | 750 MW | 12/2001 | | |
| 11. | Gila River Plant | Panda Energy Int. | 3 m. NE of Gila Bend | 2,080 MW | 12/2000 | | ^{approved} LSC hearing: March 30 |
| 12. | Big Sandy | Caitlness | near Wilicup | 500 MW | 10/2000 | 12/2002 | not filed yet |
| 13. | Mesquite | Semptra Energy Resources | next to PV satellite | <u>1,000</u> MW | 9/00-01 | 8/02-03 | not filed yet |
| TOTAL MW | | | | 11,740 MW | | | |

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Table 1. Completed generator updates for Power Upgrading Program (1978-2000).

| Plant | Units | Old | | New | | Percent Increase | Added kW (Plant) | Year Update Completed |
|----------------|-------|-------------|--|-------------|--|------------------|------------------|-----------------------|
| | | Rating (kW) | | Rating (kW) | | | | |
| Shasta | 2 | 75,000 | | 125,000 | | 66.7 | 100,000 | 1980 |
| Anderson Ranch | 2 | 13,500 | | 20,000 | | 48.1 | 13,000 | 1983 |
| Flatiron | 2 | 31,500 | | 43,020 | | 36.6 | 23,040 | 1983 |
| Glendo | 2 | 12,000 | | 19,000 | | 58.3 | 14,000 | 1983 |
| Trinity | 2 | 50,000 | | 70,000 | | 40 | 40,000 | 1984 |
| Glen Canyon | 4 | 118,750 | | 165,000 | | 38.9 | 185,000 | 1987 |
| Glen Canyon | 4 | 118,750 | | 157,050 | | 32.2 | 153,200 | 1987 |
| Blue Mesa | 2 | 30,000 | | 43,200 | | 44 | 26,400 | 1988 |
| Fremont Canyon | 2 | 24,000 | | 33,400 | | 39.2 | 18,800 | 1989 |
| Hoover | 2 | 82,500 | | 127,000 | | 53.9 | 89,000 | 1989 |
| Keswick | 3 | 25,000 | | 39,000 | | 56 | 42,000 | 1991 |
| Flaming Gorge | 3 | 36,000 | | 50,495 | | 40.3 | 43,485 | 1992 |
| Hoover | 12 | 82,500 | | 130,000 | | 57.6 | 570,000 | 1992 |
| Hoover | 1 | 109,250 | | 130,000 | | 19 | 20,750 | 1992 |
| Hoover | 1 | 40,000 | | 61,500 | | 53.7 | 21,500 | 1992 |
| Hoover | 1 | 50,000 | | 68,500 | | 37 | 18,500 | 1992 |
| Morrow Point | 2 | 60,000 | | 86,667 | | 44.4 | 53,334 | 1993 |
| Hungry Horse | 4 | 71,250 | | 107,000 | | 50.2 | 143,000 | 1993 |
| Palisades | 2 | 28,500 | | 44,141 | | 54.9 | 31,282 | 1994 |



HYDROELECTRIC POWERPLANTS FOR WHICH THE
BUREAU OF RECLAMATION HAS OPERATING RESPONSIBILITY
FISCAL YEAR 1999

| REGION | PROJECT | PLANT | STATE LOCATION | RIVER | INITIAL DATE IN SERVICE | NUMBER OF UNITS | INSTALLED CAPACITY (KW) | GROSS GENERATION (kWh) | | |
|--------|--|------------------|-------------------|-------------------|-------------------------------|-----------------------|-------------------------------|------------------------------|----------------|---------------|
| PN | BOISE | ANDERSON RANCH | IDAHO | SO. FORK, BOISE | 12-50 | 2 | 40,000 | 183,910,000 | | |
| | | BLACK CANYON | IDAHO | PAYETTE | 12-25 | 2 | 10,200 | 71,850,000 | | |
| | COLUMBIA BASIN HUNGRY HORSE MINIDOKA | BOISE RIVER DIV. | IDAHO | BOISE | 5-12 | 3 | 1,500 | 0 | | |
| | | GRAND COULEE | WASHINGTON | COLUMBIA | 3-41 | 33 | 6,809,000 | 23,980,579,375 | | |
| | | HUNGRY HORSE | MONTANA | SO.FORK, FLATHEAD | 10-52 | 4 | 428,000 | 902,601,000 | | |
| | | MINIDOKA | IDAHO | SNAKE | 5-09 | 4 | 27,700 | 202,947,000 | | |
| | | PALISADES | IDAHO | SO. FORK, SNAKE | 2-57 | 4 | 176,564 | 857,807,000 | | |
| | | GREEN SPRINGS | OREGON | TRANS. MTN. DIV. | 5-60 | 1 | 17,290 | 80,080,000 | | |
| | | CHANDLER | WASHINGTON | YAKIMA | 2-56 | 2 | 12,000 | 57,109,000 | | |
| | | ROZA | WASHINGTON | YAKIMA | 8-58 | 1 | 12,937 | 73,229,500 | | |
| | PALISADES ROGUE RIVER BASIN YAKIMA | | | | | | | | | |
| | TOTAL | | | | | | 56 | 7,535,191 | 26,410,112,875 | |
| MP | CENTRAL VALLEY | JUDGE F. CARR | CALIFORNIA | TUNNEL, LEWISTON | 5-63 | 2 | 154,400 | 564,753,000 | | |
| | | FOLSOM | CALIFORNIA | AMERICAN | 6-55 | 3 | 198,720 | 729,279,000 | | |
| | | KESWICK | CALIFORNIA | SACRAMENTO | 10-49 | 3 | 117,000 | 519,827,700 | | |
| | | NEW MELONES | CALIFORNIA | STANISLAUS | 6-79 | 2 | 300,000 | 731,077,000 | | |
| | | NIMBUS | CALIFORNIA | AMERICAN | 5-55 | 2 | 13,500 | 75,576,900 | | |
| | | O'NEILL | CALIFORNIA | SAN LUIS CREEK | 11-67 | 6 | 25,200 | 5,452,400 | | |
| | | SAN LUIS | CALIFORNIA | SAN LUIS CREEK | 3-68 | 8 | *202,000 | 213,568,000 | | |
| | | SHASTA | CALIFORNIA | SACRAMENTO | 6-44 | 7 | 587,662 | 2,469,820,300 | | |
| | | SPRING CREEK | CALIFORNIA | TUNNEL, CLEAR CRK | 1-64 | 2 | 180,000 | 625,629,000 | | |
| | | TRINITY | CALIFORNIA | TRINITY | 2-64 | 2 | 140,000 | 573,770,000 | | |
| | | LEWISTON | CALIFORNIA | TRINITY | 2-64 | 1 | 350 | 2,783,000 | | |
| | | STAMPEDE | CALIFORNIA | LITTLE TRUCKEE | 9-87 | 2 | 3,650 | 15,399,880 | | |
| | | WASHOE | | | | | | | | |
| | TOTAL | | | | | | 40 | 1,922,482 | 6,524,936,180 | |
| LC | BOULDER CANYON PARKER-DAVIS | HOOVER | ARIZ/NEV | COLORADO | 9-36 | 19 | 2,078,800 | 5,526,900,000 | | |
| | | DAVIS | ARIZONA | COLORADO | 1-51 | 5 | 240,000 | 1,396,650,000 | | |
| | | PARKER | CALIFORNIA | COLORADO | 12-42 | 4 | 120,000 | 584,058,000 | | |
| TOTAL | | | | | | 28 | 2,438,800 | 7,507,608,000 | | |
| UC | COLBRAN | LOWER MOLINA | COLORADO | PIPELINE | 12-62 | 1 | 4,860 | 18,496,450 | | |
| | | UPPER MOLINA | COLORADO | PIPELINE | 12-62 | 1 | 8,640 | 30,108,800 | | |
| | COLO. RIVER STORAGE | BLUE MESA | COLORADO | GUNNISON | 9-67 | 2 | 86,400 | 271,174,000 | | |
| | | CRYSTAL | COLORADO | GUNNISON | 6-78 | 1 | 28,000 | 164,831,000 | | |
| | | FLAMING GORGE | UTAH | GREEN | 11-63 | 3 | 151,950 | 783,462,000 | | |
| | | GLEN CANYON | ARIZONA | COLORADO | 9-64 | 8 | 1,296,000 | 5,556,789,000 | | |
| | | MORROW POINT | COLORADO | GUNNISON | 12-70 | 2 | 173,334 | 325,526,000 | | |
| | | DEER CREEK | UTAH | PROVO | 2-58 | 2 | 4,950 | 32,475,052 | | |
| | PROVO RIVER RIO GRANDE SEEDSKADEE DOLORES | ELEPHANT BUTTE | NEW MEXICO | RIO GRANDE | 11-40 | 3 | 27,945 | 102,880,100 | | |
| | | FONTENELLE | WYOMING | GREEN | 5-68 | 1 | 10,000 | 76,409,000 | | |
| | | MCPHEE | COLORADO | DOLORES | 12-92 | 1 | 1,283 | 4,424,592 | | |
| | | TOWAOC | COLORADO | TOWAOC CANAL | 5-93 | 1 | 11,495 | 18,666,405 | | |
| | | TOTAL | | | | | | 26 | 1,804,857 | 7,385,242,399 |